

## CLAIMS

What is claimed is:

1. A method of debugging a first software program, the method comprising the steps of:  
preserving a memory state of a preserved portion of the first software program;  
dynamically linking a second software program to the first software program without  
deallocating from volatile memory the first software program;  
executing the second software program; and  
when execution of the second software program would otherwise cause modification  
to targeted data that is in the preserved portion of the first software program,  
making a copy of the targeted and modifying the copy to generate a modified  
copy of the targeted data without modifying the targeted data that is in the  
preserved portion of the first software program.

2. The method of Claim 1, further comprising the steps of:  
publishing in the preserved portion of the first software program a corresponding  
symbolic name associated with the second software program; and  
multiple users accessing the second software program is accessed through the  
corresponding symbolic name.

3. The method of Claim 1, wherein the first software program is a database system.

4. The method of Claim 1, wherein the step of preserving a memory state further

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includes the step of suspending a failed application of the database system.

1 5. The method of Claim 1, further including the step of, in response to a subsequent  
2 attempt to access the targeted data in the preserved portion of the first software  
3 program, accessing the modified copy of the targeted data.

1 6. The method of Claim 5, wherein the steps of dynamically linking and executing  
2 are initiated by a particular user, and wherein the step of accessing the modified  
3 copy occurs only if that particular user initiates the subsequent attempt to access  
4 the targeted data.

1 7. The method of Claim 1, wherein:  
2 the steps of dynamically linking and executing the second software program are  
3 performed by a first user;  
4 the modified copy is a first modified copy of the targeted data; and  
5 the method further comprises the steps of:  
6 after the first modified copy has been created for the first user, a second user  
7 executing performing an operation which, when executed, would cause  
8 modification to the targeted data in the preserved portion; and  
9 performing the operation by making a second copy of the targeted data and  
10 modifying the second copy to generate a second modified copy of the  
11 targeted data, the second modified copy being separate from the first  
12 modified copy and from the preserved portion.

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- 1 8. The method of Claim 7, further comprising the steps of:  
2 after the first and second modified copies have been created for the first user and  
3 second user respectively, a third user dynamically linking and executing a  
4 third software program which, when executed, would cause modification to  
5 the targeted data in the preserved portion; and  
6 making a third copy of the targeted data and modifying the third copy to generate a  
7 third modified copy, the third modified copy being separate from the first  
8 modified copy, from the second modified copy, and from the preserved  
9 portion.
- 1 9. A computer-readable medium bearing instructions for debugging a first software  
2 program, the instructions arranged, when executed by one or more processors, to  
3 cause the one or more processors to perform the steps of:  
4 preserving a memory state of a preserved portion of the first software program;  
5 dynamically linking a second software program to the first software program without  
6 deallocating from volatile memory the first software program;  
7 executing the second software program; and  
8 when execution of the second software program would otherwise cause modification  
9 to targeted data that is in the preserved portion of the first software program,  
10 making a copy of the targeted and modifying the copy to generate a modified

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copy of the targeted data without modifying the targeted data that is in the preserved portion of the first software program.

1 10. The computer-readable medium of Claim 9, further comprising the steps of:  
2 publishing in the preserved portion of the first software program a corresponding  
3 symbolic name associated with the second software program; and  
4 multiple users accessing the second software program is accessed through the  
5 corresponding symbolic name.

1 11. The computer-readable medium of Claim 9, wherein the first software program is a  
2 database system.

1 12. The computer-readable medium of Claim 9, wherein the step of preserving a  
2 memory state further includes the step of suspending a failed application of the  
3 database system.

1 13. The computer-readable medium of Claim 9, further including the step of, in  
2 response to a subsequent attempt to access the targeted data in the preserved  
3 portion of the first software program, accessing the modified copy of the targeted  
4 data.

1 14. The computer-readable medium of Claim 13, wherein the steps of dynamically



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